

THAT WHICH IS CLAIMED:

1. A fiber optic cable, said fiber optic cable comprising:

a fiber optic cable core, said fiber optic cable core includes at least one optical fiber; and

a cable jacket, said cable jacket generally surrounds said at least one optical fiber, wherein said cable jacket has an average shrinkage of about 2.0% or less.

2. The fiber optic cable according to claim 1, said fiber optic cable core further comprising a separation layer generally surrounding said at least one optical fiber.

3. The fiber optic cable according to claim 1, said average shrinkage being measured about 1 hour after a cable jacket shrinkage test conducted at a temperature of 110°C for 2 hours with the cable core removed.

4. The fiber optic cable according to claim 1, said average shrinkage of said cable jacket being about 1.5% or less.

5. The fiber optic cable according to claim 1, said average shrinkage of said cable jacket being about 1.0% or less.

6. The fiber optic cable according to claim 1, said fiber optic cable being a portion of an interconnect cable assembly, said interconnect cable assembly having an average delta insertion loss of about 0.03 dB or less at a reference wavelength of about 1310 nm during a thermal cycling test that cycles the temperature between a minimum of -40°C and a maximum of 85°C.

7. The fiber optic cable according to claim 1, said fiber optic cable being a portion of an interconnect cable assembly, said interconnect cable assembly having an average delta insertion

loss of about 0.04 dB or less at a reference wavelength of about 1550 nm during a thermal cycling test that cycles the temperature between a minimum of -40°C and a maximum of 85°C.

5 8. The fiber optic cable according to claim 1, said fiber optic cable being a portion of an interconnect cable assembly, said interconnect cable assembly having an average delta insertion loss of about 0.04 dB or less at a reference wavelength of about 1625 nm during a thermal cycling test that cycles the temperature
10 between a minimum of -40°C and a maximum of 85°C.

9. The fiber optic cable according to claim 1, said cable jacket being formed from a material having a flexural modulus, measured using ASTM D790, of about 10,000 psi or less.

10. The fiber optic cable according to claim 1, said cable jacket being formed from a material having a flexural modulus, measured using ASTM D790, of about 8,500 psi or less.

11. The fiber optic cable according to claim 1, said cable jacket being formed from a material having a flexural modulus, measured using ASTM D790, of about 7,500 psi or less.

12. The fiber optic cable according to claim 1, said cable jacket being formed from a material having a Shore A hardness, measured using ASTM D-2240, of about 95 or less.

13. The fiber optic cable according to claim 1, said cable jacket being formed from a material having a Shore A hardness, measured using ASTM D-2240, of about 90 or less.

14. The fiber optic cable according to claim 1, said cable jacket being formed from a material having a Shore A hardness, measured using ASTM D-2240, of about 85 or less.

5 15. The fiber optic cable according to claim 1, said cable jacket being formed from a thermoplastic elastomer (TPE).

16. The fiber optic cable according to claim 1, said cable jacket being formed from a thermoplastic polyurethane (TPU).

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17. The fiber optic cable according to claim 1, said cable jacket being formed from a polyether type thermoplastic polyurethane (TPU).

18. The fiber optic cable according to claim 1, said cable jacket being formed from a partially cross-linked chlorinated polyolefin.

19. The fiber optic cable according to claim 1, said cable jacket being formed from a material having an ultimate ASTM D-412 elongation in the range of about 350 percent to about 700 percent.

20. The fiber optic cable according to claim 1, said cable jacket being formed from material having an ultimate ASTM D-412 elongation in the range of about 400 percent to about 650 percent.

21. The fiber optic cable according to claim 1, said cable jacket having a generally non-circular cross-section.

22. The fiber optic cable according to claim 1, said cable jacket being formed from a material having a melting onset

temperature being about 110°C or greater.

110°C or greater.

23. A fiber optic cable, said fiber optic cable comprising:
a fiber optic cable core, said fiber optic cable core
includes at least one optical fiber and a separation layer, said
separation layer generally surrounding said at least one optical
5 fiber; and

a cable jacket, said cable jacket generally surrounding said
separation layer, wherein said cable jacket is formed from a
material having an ultimate ASTM D-412 elongation in the range of
about 350 percent to about 700 percent.

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24. The fiber optic cable according to claim 23, said cable
jacket having an average shrinkage of about 2.0% or less measured
about 1 hour after a cable jacket shrinkage test conducted at a
temperature of 110°C for 2 hours with the cable core removed.

25. The fiber optic cable according to claim 23, said cable
jacket having a shrinkage of about 1.5% or less measured about 1
hour after a cable jacket shrinkage test conducted at a
temperature of 110°C for 2 hours with the cable core removed.

26. The fiber optic cable according to claim 23, said fiber
optic cable being a portion of an interconnect cable assembly,
said interconnect cable assembly having an average delta
insertion loss of about 0.03 dB or less at a reference wavelength
25 of selected from the group of about 1310 nm, about 1550 nm, and
1625 nm during a thermal cycling test that cycles the temperature
between a minimum of -40°C and a maximum of 85°C.

27. The fiber optic cable according to claim 23, said cable
30 jacket being formed from a material having a flexural modulus,
measured using ASTM D790, of about 10,000 psi or less.

28. The fiber optic cable according to claim 23, said cable jacket being formed from a material having a flexural modulus, measured using ASTM D790, of about 8,500 psi or less.

5 29. The fiber optic cable according to claim 23, said cable jacket being formed from a material having a flexural modulus, measured using ASTM D790, of about 7,500 psi or less.

30. The fiber optic cable according to claim 23, said cable
10 jacket being formed from a material having a Shore A hardness, measured using ASTM D-2240, of about 95 or less.

31. The fiber optic cable according to claim 23, said cable jacket being formed from a partially cross-linked chlorinated polyolefin.

32. The fiber optic cable according to claim 23, said cable jacket being formed from a material being selected from the group of a polyether type thermoplastic polyurethane, a partially cross-linked chlorinated polyolefin, a thermoplastic polyurethane (TPU), a thermoplastic elastomer (TPE), a thermoplastic vulcanizates (TPVs), and polyvinylidene fluorides (PVDFs).

33. The fiber optic cable according to claim 23, said cable
25 jacket being formed from a material having a melting onset temperature being about 110°C or greater.

34. A fiber optic cable, said fiber optic cable comprising:
a fiber optic cable core, said fiber optic cable core
includes at least one optical fiber and a separation layer, said
separation layer generally surrounding said at least one optical
5 fiber; and

a cable jacket, said cable jacket generally surrounding said
separation layer, wherein said cable jacket is formed from a
material having a flexural modulus, measured using ASTM D790, of
about 10,000 psi or less.

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35. The fiber optic cable according to claim 34, said cable
jacket having an average shrinkage of about 2.0% or less measured
about 1 hour after a cable jacket shrinkage test conducted at a
temperature of 110°C for 2 hours with the cable core removed.

36. The fiber optic cable according to claim 34, said cable
jacket having a shrinkage of about 1.5% or less measured about 1
hour after a cable jacket shrinkage test conducted at a
temperature of 110°C for 2 hours with the cable core removed.

37. The fiber optic cable according to claim 34, said fiber
optic cable being a portion of an interconnect cable assembly,
said interconnect cable assembly having an average delta
insertion loss of about 0.03 dB or less at a reference wavelength
25 of selected from the group of about 1310 nm, about 1550 nm, and
1625 nm during a thermal cycling test that cycles the temperature
between a minimum of -40°C and a maximum of 85°C.

38. The fiber optic cable according to claim 34, said cable
30 jacket being formed from a material having an ultimate ASTM D-412
elongation in the range of about 350 percent to about 700
percent.

39. The fiber optic cable according to claim 34, said cable jacket being formed from a material having a flexural modulus, measured using ASTM D790, of about 8,500 psi or less.

5 40. The fiber optic cable according to claim 34, said cable jacket being formed from a material having a flexural modulus, measured using ASTM D790, of about 7,500 psi or less.

10 41. The fiber optic cable according to claim 34, said cable jacket being formed from a material having a Shore A hardness, measured using ASTM D-2240, of about 95 or less.

42. The fiber optic cable according to claim 34, said cable jacket being formed from a partially cross-linked chlorinated polyolefin.

43. The fiber optic cable according to claim 34, said cable jacket being formed from a material being selected from the group of a polyether type thermoplastic polyurethane, a partially cross-linked chlorinated polyolefin, a thermoplastic polyurethane (TPU), a thermoplastic elastomer (TPE), a thermoplastic vulcanizates (TPVs), and polyvinylidene fluorides (PVDFs).

25 44. The fiber optic cable according to claim 34, said cable jacket being formed from a material having a melting onset temperature being about 110°C or greater.

45. A method of manufacturing a fiber optic cable comprising:
paying off at least one optical fiber and at least one
separation element;

defining a cable core by placing said at least one
5 separation element adjacent to said at least one optical fiber;
and

extruding a cable jacket around said cable core, wherein
said cable jacket is formed from a material having an ultimate
elongation, measured using ASTM D-412, being in the range of
10 about 350 percent to about 700 percent.

46. The method of claim 45, said cable jacket having an average
shrinkage of about 2.0% or less measured about 1 hour after a
cable jacket shrinkage test conducted at a temperature of 110°C
for 2 hours with the cable core removed.

47. The method of claim 45, said cable jacket having an average
shrinkage of about 1.5% or less measured about 1 hour after a
cable jacket shrinkage test conducted at a temperature of 110°C
for 2 hours with the cable core removed.

48. The method of claim 45, said fiber optic cable being a
portion of an interconnect cable assembly, said interconnect
cable assembly having an average delta insertion loss of about
25 0.03 dB or less at a reference wavelength selected from the group
of about 1310 nm, about 1550 nm and 1625 nm during a thermal
cycling test that cycles the temperature between a minimum of -
40°C and a maximum of 85°C.

30 49. The method of claim 45, the step of extruding said cable
jacket being accomplished by a tube-on process.

50. The method of claim 45, said step of extruding having a draw-down ratio (DDR) of about 2 or less.

51. The method of claim 45, the step of extruding said cable jacket further comprising a flexural modulus of said material, measured using ASTM D790, of about 10,000 psi or less.

52. The method of claim 45, the step of extruding said cable jacket further comprising a flexural modulus of said material, measured using ASTM D790, of about 8,500 psi or less.

53. The method of claim 45, the step of extruding said cable jacket further comprising a flexural modulus of said material, measured using ASTM D790, of about 7,500 psi or less.

54. The method of claim 45, the step of extruding a cable jacket further comprising a Shore A hardness of said material, measured using ASTM D-2240, of about 95 or less.

55. The method of claim 45, the step of extruding said cable jacket further comprising a Shore A hardness of said material, measured using ASTM D-2240, of about 90 or less.

56. The method of claim 45, the step of extruding said cable jacket further comprising a Shore A hardness of said material, measured using ASTM D-2240, of about 85 or less.

57. The method of claim 45, the step of extruding said cable jacket further comprising said material being selected from the group of a polyether type thermoplastic polyurethane, a partially cross-linked chlorinated polyolefin, a thermoplastic polyurethane (TPU), a thermoplastic elastomer (TPE), a thermoplastic vulcanizates (TPVs), and polyvinylidene fluorides (PVDFs).

58. The method of claim 45, said step of extruding said cable jacket further comprising said material having a melting onset temperature being about 110°C or greater.

58. The method of claim 45, said step of extruding said cable jacket further comprising said material having a melting onset temperature being about 110°C or greater.

59. A method of manufacturing a fiber optic cable comprising:
paying off at least one optical fiber and at least one
separation element;

defining a cable core by placing said at least one
separation element adjacent to said at least one optical fiber;
and

extruding a cable jacket around said cable core, wherein
said cable jacket is formed from a material having a flexural
modulus, measured using ASTM D790, of about 10,000 psi or less.

60. The method of claim 59, said cable jacket having an average
shrinkage of about 2.0% or less measured about 1 hour after a
cable jacket shrinkage test conducted at a temperature of 110°C
for 2 hours with the cable core removed.

61. The method of claim 59, said cable jacket having an average
shrinkage of about 1.5% or less during a cable jacket shrinkage
test conducted at a temperature of 110°C for 2 hours with the
cable core removed.

62. The method of claim 59, said fiber optic cable being a
portion of an interconnect cable assembly, said interconnect
cable assembly having an average delta insertion loss of about
0.03 dB or less at a reference wavelength selected from the group
of about 1310 nm, about 1550 nm, and 1625 nm during a thermal
cycling test that cycles the temperature between a minimum of -
40°C and a maximum of 85°C.

63. The method of claim 59, the step of extruding said cable
jacket being accomplished by a tube-on process.

64. The method of claim 59, said step of extruding said cable
jacket having a draw-down ratio (DDR) of about 2 or less.

65. The method of claim 59, the step of extruding said cable jacket further comprising an ultimate elongation of said material, measured using ASTM D-412, being in the range of about 350 percent to about 700 percent.

66. The method of claim 59, the step of extruding said cable jacket further comprising a Shore A hardness of said material, measured using ASTM D-2240, of about 95 or less.

67. The method of claim 59, the step of extruding said cable jacket further comprising said material being selected from the group of a polyether type thermoplastic polyurethane, a partially cross-linked chlorinated polyolefin, a thermoplastic polyurethane (TPU), a thermoplastic elastomer (TPE), a thermoplastic vulcanizates (TPVs), and polyvinylidene fluorides (PVDFs).

68. The method of claim 59, said step of extruding said cable jacket further comprising said material having a melting onset temperature being about 110°C or greater.

69. A fiber optic cable, said fiber optic cable comprising:
a fiber optic cable core, said fiber optic cable core
includes at least one optical fiber and a separation layer, said
separation layer generally surrounding said at least one optical
5 fiber; and

a cable jacket, said cable jacket generally surrounding said
separation layer, wherein said fiber optic cable is a portion of
an interconnect cable assembly, said interconnect cable assembly
having an average delta insertion loss of about 0.03 dB or less
10 at a reference wavelength selected from the group of about 1310
nm, about 1550 nm, and 1625 nm during a thermal cycling test that
cycles the temperature between a minimum of -40°C and a maximum
of 85°C.

70. The fiber optic cable according to claim 69, said cable
jacket having an average shrinkage of about 2.0% or less measured
about 1 hour after a cable jacket shrinkage test conducted at a
temperature of 110°C for 2 hours with the cable core removed.

71. The fiber optic cable according to claim 69, said cable
jacket having an average shrinkage of about 1.5% or less measured
about 1 hour after a cable jacket shrinkage test conducted at a
temperature of 110°C for 2 hours with the cable core removed.

25 72. The fiber optic cable according to claim 69, said cable
jacket being formed from a material having a flexural modulus,
measured using ASTM D790, of about 10,000 psi or less.

73. The fiber optic cable according to claim 69, said cable
30 jacket being formed from a material having a Shore A hardness,
measured using ASTM D-2240, of about 95 or less.

74. The fiber optic cable according to claim 69, said cable jacket being formed from a thermoplastic elastomer (TPE).

75. The fiber optic cable according to claim 69, said cable jacket being formed from a thermoplastic polyurethane (TPU).

76. The fiber optic cable according to claim 69, said cable jacket being formed from a polyether type thermoplastic polyurethane (TPU).

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77. The fiber optic cable according to claim 69, said cable jacket being formed from a partially cross-linked chlorinated polyolefin.

78. The fiber optic cable according to claim 69, said cable jacket being formed from a material having an ultimate elongation, measured using ASTM D-412, being in the range of about 350 percent to about 700 percent.

79. The fiber optic cable according to claim 69, said cable jacket being formed from a material having a melting onset temperature being about 110°C or greater.

80. The fiber optic cable according to claim 69, said cable jacket being formed from a material being selected from the group of a polyether type thermoplastic polyurethane, a partially cross-linked chlorinated polyolefin, a thermoplastic polyurethane (TPU), a thermoplastic elastomer (TPE), a thermoplastic vulcanizates (TPVs), and polyvinylidene fluorides (PVDFs).